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UNITED STATES DEPARTMENT OF AGRICULTURE
AGRICULTURAL RESEARCH ADMINISTRATION
BUREAU OF ENTOMOLOGY AND PLANT QUARANTINE
Division of Forest Insect Investigations

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ANNUAL FOREST INSECT STATUS REPORT
IDAHO AND MONTANA
1949

By James C. Evenden
Division of Forest Insect Investigations

Agricultural Research Administration

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Each year a report of forest insect conditions within the States of Idaho and Montana is prepared at the Coeur d'Alene Forest Insect Laboratory. All sources of information have been used in the preparation of these statements. An increased program of detection surveys has provided data as to the current status of insect infestations in many forest areas. Reports of abnormal or unusual forest insect situations have been received from the field officers of public and private forest agencies, and have constituted a valuable and indispensible service to us. In many instances this information was our first knowledge of infestations that have subsequently proven to be destructive outbreaks.

We recognize that this report does not tell a complete story as to the status of insect conditions within the territory served by this laboratory. The forest insect surveys that have been made possible through the provisions of the Forest Pest Act, however, is a forward step in correcting this situation. With these surveys, and the continued cooperation of all forest land managing agencies, this annual report will tend to furnish a complete and accurate depiction of insect conditions within the region.

A responsibility of the Bureau of Entomology and Plant Quarantine, of which the Coeur d'Alene Laboratory is but a small part, is to protect our forest crops from unwarranted damage by insect enemies. This task is not the mere application of artificial control to existing infestations. It involves detailed fundamental studies of insect life histories and habits; of natural forces of control; of the behavior or trends of insect epidemics; of control methods; of the prevention of outbreaks rather than their suppression; and of survey methods, - all of which have many phases. These tasks can be considered as the study or research side of our part in the forestry program.

An effective application of the results of research is the other or service side of our responsibility. If research data are to be properly applied we must know the current status of insect conditions in all forest areas. The problem involved in obtaining this information is a large and difficult one. We have no desire to build an organization that will parallel or duplicate the possible efforts of other agencies in helping to obtain this information. For that reason we find it necessary to ask for assistance in meeting this objective from all public and private

forest agencies. What we need are reports of all forest insect situations that are noted by the field officers of these organizations, regardless of their apparent severity. Given these reports we will assume the responsibility of deciding as to the severity of each situation reported and the action that should follow. Obviously we will make mistakes, as the future of insect infestation is not always predictable. However we hope we will not miss any serious situation.

The fulfillment of this phase in the preservation and management of our timbered resources can not be done by any one agency. As a result we sincerely ask for your cooperation and assistance in helping to perform this most important task; for it is a problem of all foresters. Please let us have your reports of insect infestations or of any unusual or abnormal forest condition that you may observe. It is our hope that we will receive many reports each year, and that they will all prove to be of a non-serious nature.

Bark Beetles

Mountain Pine Beetle (Dendroctonus monticolae Hopk.) - White Pine

An abnormal number of windthrown white pine trees that fell during the winter of 1948-1949 contributed to the building of ~~these~~ epidemic beetle populations. Although the mountain pine beetle attacks and kills healthy trees, windthrows are more satisfactory breeding material. The importance of infested windfalls rests in the high potential brood development that occurs in such material. Our studies have shown that although twice as many beetles may attack a standing tree, the broods of beetles that are produced are of no greater numbers than those which develop in the lightly attacked windfalls. This increase potential makes white pine windfalls an important factor in the rapid development of bark beetle outbreaks.

On the Coeur d'Alene and Clearwater National Forests there are severe infestations of this beetle in valuable white pine areas. On a relatively small acerage within these two forests there are 17,000 infested trees and windfalls. The infested areas are as follows:

Clearwater National Forest			
Orgrande (Park)	600 A -	1560	Trees & Windfalls
Teper Creek	1090 A -	496	" "
Sheep Mountain	1300 A -	615	" "
Coeur d'Alene National Forest			
Yellow Dog & Downey Units	16000 A -	12400	" "
Steamboad Units	8300 A -	1715	" "
		16786	

Control measures have been recommended for these areas. The volume of merchantable white pine threatened by these infestations is valued at $23,000,000.

Detection surveys conducted during the past season revealed mountain pine beetle infestation in all white pine stands examined. Although these infestations varied in their intensity, they are all regarded as being potentially serious. Under favorable conditions epidemic beetle populations in white pine can develop in a few years. On the St. Joe National Forest there are a few areas where the situation will warrant reexamination in 1950. An infestation was reported from the Wallace District of the Coeur d'Alene National Forest that will be examined during the coming season.

A severe wind storm swept through northern Idaho in November 1949. Fear is expressed as to possible bark beetle infestation that can originate within the mature trees that were blown down by this storm. Data are not available as to the severity or extent of the damage that is expected to be found. Plans have been made by land managing agencies to obtain this information as early in the 1950 season as possible. With this information available to us every possible effort will be made to obtain data that will permit steps to be taken to prevent the development of destructive bark beetle outbreaks.

Mountain Pine Beetle - Lodgepole Pine

Serious epidemics of the mountain pine beetle are present in the lodgepole pine stands of the Kootenai and Cabinet National Forests in Montana and the Targhee, Caribou, and Teton National Forests in southeastern Idaho and northwestern Wyoming. On the Kootenai Forest two lodgepole pine infestations were placed under control in 1948. In 1949 an additional outbreak of some 1600 infested trees was treated. A post control survey of these areas in October 1949 disclosed one serious situation with several other more lightly infested units. The present infestation involves 12,023 acres on which there are 8,700 trees to be treated. Control measures have been recommended.

An epidemic in the lodgepole pine stands of the Thompson River drainage of the Cabinet National Forest was discovered in 1948. Control measures were directed against this rapidly increasing outbreak in 1949 and a total of 19,490 trees were treated. A post control survey of the entire drainage disclosed a more serious condition than had been anticipated. Control has been recommended for the treatment of 27,400 infested trees.

In the Targhee, Teton and Caribou National Forests there is a serious epidemic of the mountain pine beetle that threatens valuable commerical and scenic lodgepole pine forests. This destructive situation was reported from the Caribou forest in 1944 and during subsequent years a northward spread occurred. Control was directed against the northern spots of infestation on the Targhee and Teton forests in 1947, and in 1948 all infested areas on these two forests were covered by control, and a clean up project planned for 1949. Unfortunately it was not possible to complete this objective prior to the emergence of the beetles in early July.

A post control survey was made of the entire area, and again recommendations were made for a clean up project in 1950. The treatment of 60,287 trees on an area of 50,000 acres will be required to complete this objective.

In the Sawtooth National Forest of central Idaho there are several small ~~acres~~ areas of lodgepole pine infestation. These are localized outbreaks along ~~stream~~ bottoms that threaten timber stands on recreational sites. To protect these areas the treatment of some 700 infested trees have been recommended.

Several years ago a severe infestation of the mountain pine beetle in lodgepole pine in the Minidoka National Forest in southern Idaho, was brought under control by direct methods. Since that time a satisfactory condition has prevailed as a result of maintenance control, conducted when and where needed. In this forest there are now some small scattered groups of infested trees for which control has been recommended.

A mountain pine beetle infestation of serious potentials in the Beaverhead National Forest must be resurveyed in 1950. This infestation is in the lodgepole pine stands of the Jack Creek Drainage, where damage occurred in 1947 and 1948. A survey of this situation in 1949 recorded the occurrence of a marked natural decrease in its severity. Because of this condition, and the fact that the outbreak is confined to the one small drainage, no control measures were recommended. The danger of such action is fully appreciated, and a thorough resurvey of the general area will be made in 1950.

In the St. Joe National Forest there is an infestation in lodgepole pine along the Idaho-Montana Divide that was discovered in 1948. The situation was resurveyed in 1949 with no material change in the severity of the infestation being recorded. A reexamination is considered as being warranted during the 1950 season.

Forest Ranger Reports listed lodgepole pine infestations in the Lost Block area of the Coeur d'Alene National Forest in Idaho, in the Brush Creek Sale area of the Cabinet, and in the Spotted Bear and Big Prairie Districts of the Flathead National Forests, in Montana.

Available data indicated a decided increase in the number and severity of mountain pine beetle outbreaks in the lodgepole pine stands of the region. In view of this evident condition all known lodgepole pine infestations will be included in the 1950 survey program.

Mountain Pine Beetle - Ponderosa Pine

Although usually considered as an enemy of white pine and lodgepole pine, the mountain pine beetle also attacks and kills ponderosa pine. During past years there have been severe losses of this tree species associated with outbreaks of this insect.

Late in 1947 a potentially dangerous infestation was recorded in the ponderosa pine stands of the Castle Mountain and Little Belt Districts of the Lewis and Clark National Forest, Montana. Timber values did not warrant the cost of control and no further attention was given to this situation until 1949. A survey during the past season indicated a marked reduction in the severity of this situation. There is, however, one small area of 880 acres on which there are 422 infested trees. Although control measures were not warranted, this area will be rechecked during the coming season.

There is a light infestation of this beetle in the West Fork District of the Bitterroot National Forest, Montana. This situation is considered as having developed in residual stockings on ponderosa pine sale areas, and in a blowdown in Wheeler Creek. Although not considered as serious at this time this reported outbreak will be examined in 1950.

In the Cabinet National Forest, Montana, red topped ponderosa pine trees are reported as scattered throughout the Trout Creek District. Although it is possible that the Oregon pine engraver, and not the mountain pine beetle is responsible for their death, the situation will be examined.

Infestations of this insect were again reported within the ponderosa pine stands of the Lincoln District of the Helena National Forest, Montana. During the past season an extensive examination was made of this area and only slight evidence of 1948 attacked trees was observed. Although no factual data were obtained from this examination, it was quite evident that there has been a marked decrease in the severity of this situation.

Ponderosa pine losses were reported as increasing in the Seeley Lake District of the Lolo National Forest, Montana. It is possible that at least some of this loss, will prove to have resulted from attacks of the Oregon pine engraver.

Black Hills Beetle (Dendroctonus ponderosae Hopk.) - Ponderosa Pine

Fortunately the range of this destructive beetle extends northward only into the forests of southeastern Montana. In 1947 an infestation of the Black Hills Beetle was reported from the Long Pine Division, Custer National Forest of South Dakota. An extensive examination was made at that time and although the situation was not considered as alarming, a survey was planned for the following season. This survey indicated a rapid build up in the infestation and control measures were conducted in June 1949. A subsequent post control survey showed this work to have been entirely successful, with only 146 infested trees now present on one small unit. These trees will be treated in June 1950.

Western Pine Beetle (Dendroctonus brevicomis Lec.) - Ponderosa Pine

An infestation of the western pine beetle was reported again from the West Ford District of the Bitterroot National Forest, Montana.

Although an examination of this situation was planned for the 1949 season, other assignments considered to be of more importance prevented. However it will be included in this coming seasons survey program.

In the Nezperce National Forest of Idaho light infestations of this beetle were reported from the Clearwater and Salmon Ranger Districts. These reports do not seem to depict dangerous situations but an examination will be made if at all possible.

Douglas Fir Beetle (Dendroctonus pseudotsugae Hopk.) - Douglas Fir

It is stated by forest officers that the Douglas-fir beetle is destroying more timber within the Northern Rocky Mountain area than any other bark beetle. This may or may not be true, but the fact remains that there are infestations of this beetle in most all Douglas fir stands. A few years ago market conditions did not warrant the placing of much importance upon the loss of Douglas-Fir. Now this situation has changed and such losses are no longer passed as of no importance.

In the Coeur d'Alene National Forest of Idaho, an infestation of this insect is reported within the Lost Block timber sale area. Such outbreaks are quite commonly associated with timber sales. Infestations of varying severity are also present within the Tally Lake District of the Flathead, the White Sulphur District of the Lewis and Clark, and the Seeley Lake District of the Lolo National Forests of Montana.

A serious Douglas Fir beetle infestation is present within the Gallatin National Forest, Montana. In this forest severe losses of timber have occurred during the past few years. This is particularily true of the Big Timber and Shields Ranger Districts where the infestation reached epidemic proportions some years ago. In these two Districts the situation is so severe that control measures do not appear to be economically feasible.

In the Helena National Forest in Montana, rather severe infestations of this beetle were reported within the Canyon Ferry, Helena, and Townsend Ranger Districts. Reports of timber losses in several areas were received from the Kootenai National Forest, Montana.

There are several infestations of this destructive bark beetle within the Douglas Fir stands of the Glacier National Park. A rather alarming situation in the North Fork area includes increasing infestations in the West Lake and Kintla Lake areas.

Engelmann Spruce Beetle (Dendroctonus engelmanni Hopk.) - Engelmann Spruce

The Engelmann spruce beetle takes a much larger toll from all mature spruce stands than is credited to its activity. Unfortunately the foliage of infested trees falls before there is much discoloration. As a result this loss is seldom obvious as there are no red topped spruce trees,

which is usually the first indication of an infestation that is observed. In fact, spruce trees that appear to have been dead for years may have been attacked the previous season and still harbor broods of beetles. Not only is the annual loss from this beetle more severe than is usually realized, but when epidemics occur, a large percent of the trees within the infested area are killed in a few years. Abnormal accumulation of windfalls are a most important factor contributing to the development of destructive spruce beetle populations. Any unusual number of spruce windfalls must be viewed with alarm.

In the Payette National Forest, near McCall, Idaho, there are a number of spruce beetle infestations throughout the scattered spruce stands of that area. Control measures were directed against these infestations during the past season. A post control survey will be conducted late in the 1950 season to determine the results obtained and the need for further work in 1951.

Pine Engraver Beetle (Ips oregoni Eisch.)

The pine engraver is usually considered as being secondary in its attack habits, with logging slash and weakened trees being its preferred host. However large populations of this beetle often develop from such material, and for a short time they will attack and kill healthy mature trees. Fortunately such outbreaks are short lived, and by the time such conditions are observed the danger of further damage has usually passed. Reports of damage from this beetle were received from a number of areas this year, but in most instances they were found to be associated with timber or wood cutting operations. The Cabinet, Colville, Coeur d'Alene, Flathead, and Clearwater National Forests all reported Ips oregoni infestations.

Forest Defoliators

As the name implies, forest defoliators are insects that feed upon the foliage of forest trees while in their larvae or caterpillar stage of development. Such insects as the Douglas fir tussock moth, spruce budworm, pine butterfly, etc. are usually considered as belonging to this group. However less conspicious insects such as scales and aphids must also be placed in this group of defoliators.

Douglas Fir Tussock Moth (Hemerocampa pseudotsugata McD.)

Since the 1947 Douglas Fir Tussock Moth Control project in northern Idaho many questions have been asked as to a possible recurrence of this epidemic. It seems well to try and answer this question. At the present time we have no knowledge of any current damage from this insect within the treated area, or in any portion of the Rocky Mountain region. However as during the past 20 years there have been several outbreaks of the Douglas Fir Tussock Moth in different portions of this area there is no reason to assume that there will be no further outbreaks. But when or where such future outbreaks will occur no one can say.

Spruce Budworm (Archips fumiferana Clem.)

A complete record as to the location and severity of all spruce budworm infestations within the states of Idaho and Montana is not available. However, we do have reports of the larger outbreaks, and last season an intensive survey was made of some areas. On the Helena, Gallatin, and Deerlodge National Forests, for instance, there are approximately half a million acres of spruce budworm infestation. The severity of the damage in these infested areas varies from light to very heavy. A survey was also made of that portion of Idaho adjacent to the spruce budworm infested areas of northeastern Oregon. The information obtained from this survey showed infestations to be present in 81 sections, located in nine different Townships. In the Idaho areas the damage is not as severe as that recorded on the Helena National Forest, Montana.

On the Beaverhead National Forest there is a light budworm infestation scattered throughout the Lima district. The report of this situation did not include details as to acerage.

In the Flathead National Forest a budworm infestation is distributed throughout the Spotted Bear, Big Prairie, and Condon Districts. In the Spotted Bear and Big Prairie Districts the infestation has been present for a number of years, and heavy losses of timber are reported. The infestation in the Condon District has apparently spread from the Spotted Bear and Big Prairie Districts, and this is the first year that it has been reported.

On the Lewis and Clark National Forest a budworm infestation was again reported as distributed throughout the White Sulphur Springs District. This outbreak has been present for a number of years with no apparent change in its severity.

There has been a spruce budworm infestation within the Powell District of the Lolo National Forest of Montana since 1946. During the past two seasons the outbreak in the Papoose - Squaw Creek area has decreased to where there was little 1949 defoliation. However new outbreaks were reported in the White Sand and Storm Creek drainages. Although the total infestation in this district covers some 25,000 acres no serious damage has as yet been reported.

There is a budworm infestation within the Salmon River district of the Nezperce National Forest, Idaho. This outbreak is reported to be increasing in severity with severe damage occurring.

In the Nyack Creek drainage of the Glacier National Park a budworm infestation has been present for several years. The 1949 report of this situation indicates no change in its severity. However reports of the Waterton and Belly River infestations indicate a decline in their severity.

Larch Sawfly (Pristiphora orichsonii Htg.)

An infestation of the larch sawfly was reported from the Superior District of the Lolo National Forest. The area infested is estimated at

covering 500 acres, with no serious damage occurring. A few years ago outbreaks of this insect covered tremendous acreages of larch throughout the region. Fortunately larch is a difficult tree to kill by defoliation, so little if any damage occurred.

Black-headed Budworm (Acleris variana Fern.)

In the Kootenai National Forest an outbreak of the black-headed budworm occurred within the larch and fir stands of the Libby District. On an infested area of 3000 or more acres some portions were severly defoliated. Fortunately this outbreak was reduced by natural causes which made institution of direct control unnecessary. ?

Hemlock Looper (Lambdina fiscellaria Gven)

A decreasing infestation of this destructive insect on some 80,000 acres has again been reported in the Seeley Lake District of the Lolo National Forest. This looper is reported as working in association with the spruce budworm. It is possible that it may prove to be the false hemlock looper (Lepytia canosaria Wlk.)

Miscellaneous Forest Insects

There are many different species of insects that attack forest and shade trees as well as crude forest products. Each year a large number of inquiries are received at this laboratory concerning their activity. In some instances of damage remedial measures can be recommended, while for other situations there is little that can be done.

Christmas Trees

The fading and falling of foliage from small Douglas fir trees is a problem of economic importance to the Christmas tree industry. This problem became quite severe in the fall of 1947. Studies by all interested forest research agencies indicated that although other factors may contribute, the Douglas fir needle cast (Rhabdocline pseudotsugae Syd.) is perhaps the most logical explanation. Instances of this type of damage to small Douglas Fir trees were reported from the Beaverhead, Flathead, and Lolo National Forest. However no complaint from Christmas tree operators were received during the past season.

Engelmann Spruce Weevil (Pissodes engelmann Hopk.)

Damage to the terminals of small trees on an area of 20,000 acres is reported from the Seeley Lake District of the Lolo National Forest. Although the attacks of this insect do not kill the trees, the terminals are killed and deformation of the crown follows.

Lodgepole Needle Miner (Recurvaria sp.)

An outbreak of a lodgepole pine needle miner was reported from the Cassia Division of the Minidoka National Forest in 1948. This infestation was quite severe on an area of several thousand acres. Although these attacks will not kill trees, several years of injury to the needles will reduce the vigor of the trees, and they become susceptible to bark beetle attack. This outbreak was reported as showing no change in its severity during the 1949 season.

Spruce Gall Aphis (Adelges cooleyi Gill.)

A number of reports of injury by this aphid to ornamental trees are received each year. The importance of these attacks rests in a disfiguring of the tree rather than its death. It is most difficult to control.

SURVEY REPORTS

Evenden, James C.

Forest Insect Detection Survey
Beaverhead National Forest, Montana
October 27, 1949

Forest Insect Detection Survey
Cabinet National Forest, Montana
November 1, 1949

Forest Insect Detection Survey
Clearwater National Forest, Idaho
September 8, 1949

Forest Insect Detection Survey
Coeur d'Alene National Forest, Idaho
October 31, 1949

Forest Insect Detection Survey
Custer National Forest, Montana
October 27, 1949

Forest Insect Detection Survey
Kaniksu National Forest, Idaho
November 2, 1949

Forest Insect Detection Survey
Lewis and Clark National Forest, Montana
November 1, 1949

Forest Insect Detection Survey
St. Joe National Forest, Idaho
October 31, 1949

Johnson, Philip C.

Spruce Budworm Detection Survey
Helena, Gallatin, and Deerlodge
National Forests, Montana
November 2, 1949

Observations on Christmas tree blight in northwestern Montana, season of 1947 and 1948.
January 25, 1949

The efficacy of roadside plots as an aid in estimating current bark beetle damage in ponderosa pine forests.
January 25, 1949

Gibson, Archie L.

Forest Defoliator conditions in a portion of western Idaho.
November 2, 1949

Survey of Engelmann spruce beetle infestation on the Payette National Forest (Idaho) in 1948.
January 26, 1949

Survey of Black Hills beetle infestation in ponderosa pine. Long Pines Division. Custer National Forest (Montana). 1948.
January 26, 1949

Survey of the mountain pine beetle infestation in western white pine on the Coeur d'Alene National Forest (Idaho) in 1948.
January 28, 1949

Survey of mountain pine beetle infestation on the Kootenai National Forest (Montana). 1948
February 11, 1949

Survey of mountain pine beetle infestation on the Cabinet National Forest (Montana). 1948
February 15, 1949

Status of mountain pine beetle infestation on part of the St. Joe National Forest (Idaho). 1948
March 8, 1949

Survey of mountain pine beetle infestation in western white pine. Clearwater National Forest (Idaho). 1948
February 21, 1949

Terrell, Tom T.

Insect survey, Thompson River Project, Cabinet National Forest, Montana. Mountain pine beetle in Lodgepole pine.
October 27, 1949

Insect survey, Payette National Forest, Idaho. Engelmann spruce beetle in Engelmann Spruce stands, western pine beetle in ponderosa pine.
November 10, 1949.

Terrell, Tom T.
Insect survey, Mountain pine beetle in lodgepole pine. Targhee-Teton Project. Wyoming
November 4, 1949

Mountain pine beetle infestation in lodgepole pine. Targhee-Teton project, Wyoming.
March 16, 1949

Roffler, Hans C. (Forest Service)
Post-control survey, Yellow Dog-Downey Creeks, Coeur d'Alene National Forest, Idaho
November 2, 1949

Rust, Henry G.
Forest Insect Post-Control Survey
Kootenai National Forest, Montana.
November 1, 1949